

I claim:

1. An encoder, comprising:
  - a housing;
  - a light source coupled to the housing;
  - a light sensor coupled to the housing and positioned to receive a light beam from the light source;
  - a wheel having opaque and transmissive sections which may be positioned to pass through the light beam before it reaches the light sensor; and
  - a floating aperture piece, which defines at least one aperture, wherein:
    - the aperture is positioned so that the light beam must pass through it before reaching the light sensor; and
    - the floating aperture piece slidably engages the housing while allowing a loose tolerance between a position of the wheel and a position of the housing, thereby substantially eliminating a positioning error between the aperture and the wheel.
2. The encoder of claim 1, wherein the floating aperture piece further:
  - defines an opening which may encircle a shaft on which the wheel may be mounted; and
  - comprises a key which slidably engages the housing while allowing a loose tolerance between the position of the wheel and the position of the housing, thereby substantially eliminating a positioning error between the aperture and the wheel.
3. The encoder of claim 2, wherein the key has angled edges which do not lie in parallel planes.
4. The encoder of claim 2, wherein the key has straight edges which lie in substantially parallel planes.

5. The encoder of claim 2, wherein the floating aperture piece further defines orthogonal slits in conjunction with the defined opening in order to facilitate encircling the shaft.

6. The encoder of claim 1, further comprising a spring member, wherein:  
the floating aperture piece further comprises a notch sized to engage a shaft on which the wheel may be mounted; and  
the spring member is coupled between the housing and the floating aperture piece such that the spring member biases the floating aperture piece towards the shaft.

7. The encoder of claim 6, wherein the spring member is a coil spring.

8. The encoder of claim 6, wherein the spring member is a leaf spring.

9. The encoder of claim 6, wherein the spring member is a flexible protrusion integral with the housing.

10. The encoder of claim 6, wherein the notch has an arcuate portion.

11. The encoder of claim 6, wherein the notch has a linear portion.

12. A method of positioning an encoder housing relative to an encoder wheel mounted on a shaft in order to reduce or eliminate a positioning error, comprising:

engaging the shaft adjacent to the encoder wheel with a floating aperture piece;  
slidably engaging the floating aperture piece with the encoder housing; and  
fixing the encoder housing in position without adjusting a location of the floating aperture piece.

13. The method of claim 12, wherein engaging the shaft adjacent to the encoder wheel with the floating aperture piece is performed without passing the floating aperture piece over either end of the shaft.

14. The method of claim 12, wherein engaging the shaft adjacent to the encoder wheel with the floating aperture piece comprises passing the floating aperture piece over either end of the shaft.

15. An imaging mechanism, comprising:  
means for media positioning in an imaging zone; and  
an encoder, comprising:  
a housing;  
a light source coupled to the housing;  
a light sensor coupled to the housing and positioned to receive a light beam from the light source;  
a wheel having opaque and transmissive sections which may be positioned to pass through the light beam before it reaches the light sensor;  
and  
a floating aperture piece, which defines at least one aperture,  
wherein:  
the aperture is positioned so that the light beam must pass through it before reaching the light sensor; and  
the floating aperture piece slidably engages the housing while allowing a loose tolerance between a position of the wheel and a position of the housing, thereby substantially eliminating a positioning error between the aperture and the wheel.

16. An encoder, comprising:

means for positioning an aperture piece relative to an encoder wheel so that a positioning error between the aperture and the encoder wheel is minimized; and means for slidably positioning an encoder housing including a light source and a light sensor relative to the aperture piece.